Assignment 1

1. Find the names and CGPAs of all students from the "IT" department.

```
db.students.find(
   { department: "IT" },
   { _id: 0, name: 1, cgpa: 1 }
)
```

2. List all students whose CGPA is greater than or equal to 8.5. Show only their name, roll number, and department.

```
db.students.find(
   { cgpa: { $gte: 8.5 } },
   { _id: 0, name: 1, roll_no: 1, department: 1 }
)
```

3. Find students who are in either the "ECE" or "ME" department using $in.

```
db.students.find(
   { department: { $in: ["ECE", "ME"] } }
)
```

4. Get the name and CGPA of students who are in the 4th year and have a CGPA greater than 8.0.

```
db.students.find(
   { year: 4, cgpa: { $gt: 8.0 } },
   { _id: 0, name: 1, cgpa: 1 }
)
```

5. Find all students who are not in the "CSE" department and have a CGPA less than or equal to 7.5 using $and and $ne.

```
db.students.find(
  {
    $and: [
      { department: { $ne: "CSE" } },
      { cgpa: { $lte: 7.5 } }
    ]
  }
)
```

6. Display the top 3 students with the highest CGPA across all departments.

```
db.students.find()
  .sort({ cgpa: -1 })
  .limit(3)
```

7. Show the next 3 students after skipping the top 3 based on CGPA (pagination).

```
db.students.find()
  .sort({ cgpa: -1 })
  .skip(3)
  .limit(3)
```

8. Increase the CGPA by 0.2 for all students in the "CSE" department.

```
db.students.updateMany(
  { department: "CSE" },
  { $inc: { cgpa: 0.2 } }
)
```

9. Set the department to "Probation" for all students with CGPA less than 7.0.

```
db.students.updateMany(
    { cgpa: { $lt: 7.0 } },
    { $set: { department: "Probation" } }
)
```

10. Remove the email field from all students in the "ME" department.

```
db.students.updateMany(
    { department: "ME" },
    { $unset: { email: "" } }
)
```

11. Rename the field cgpa to gpa for all students.

```
db.students.updateMany(
    {},
    { $rename: { "cgpa": "gpa" } }
)
```

12. Replace the entire document of a student with roll number "CSE2104" with a new record containing updated values.

```
db.students.replaceOne(
    { roll_no: "CSE2104" },
    {
        name: "Aditya Raj",
        Roll_no: "CSE2104",
        department: "CSE",
        gpa: 8.9,
        year: 4,
        email: "aditya.cse@univ.edu"
    }
)
```